

Integrated Trade Service Models: Best Practices in E-Trade Finance

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Abstract

The emergence of global value chains (GVCs) and the growing use of electronic supply chain management techniques in the private sector presents both challenges and opportunities to traditional trade facilitation systems and trade promotion organizations (TPOs). This study highlights opportunities for TPOs to integrate their traditional trade development operations (supporting sales) with downstream trade management functions (post-sales fulfillment) on the basis of electronic platforms, the benefits in terms of diminishing traditional payment risk and accelerating cash flow within supply chains of integrating trade finance into such e-platforms, and the potential to facilitate SMEs internationalization efforts through ICT enablement. The study suggests that due to problems of attaining sufficient scale in trade facilitation networks and the presence of externalities, under-investment by the private sector may occur in trade facilitation systems. Insofar as neutral third party sponsors can overcome/reduce some of these problems, government involvement could be contemplated, especially if SMEs are to be the prime beneficiaries in terms of enhanced access to international markets.

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Introduction

The modern global economy is characterized by a growing interconnectivity of geographic markets, industrial supply chains and trade facilitation systems and services. This ever-deepening functional integration in the global economy is enabled by “rapidly increasing industrial capabilities in developing countries, capabilities that reside both in local firms and the affiliates of multi-national firms, and new computer-mediated approaches to real-time integration of distant activities. ... As a result, opportunities have opened up for firms to engage with the global economy—as buyers, suppliers, sellers, distributors, contractors, and service providers—in ways that were impossible even a few years ago.”¹

Many well known private sector names such as Dell, Acer and Wal-Mart, as well as lesser known names such as Brooks Sports, Burton Snowboard, Columbia Sports, Golden Chang and Grupo Bimbo, have actively embraced these developments. Thus, for many firms, technology-based supply chain management is no longer an add-on feature of their organizational model; it has become a core component that influences their operating and manufacturing models.

These developments pose a challenge to trade promotion organizations (TPOs). As the International Trade Centre recently noted, “Trade Support Institutions must ... continually justify their existence and their right to demand scarce resources. This can be done only if they remain relevant, offer needed services to their client exporters, and strive to provide the best services at a competitive cost.”² Some TPOs, and related trade facilitation agencies already have embraced these developments, including Korea Trade Network (KTNet), Hong Kong’s Digital Trade and Transportation Network (DTTN), and Mexico’s Nacional Financiera (Nafinsa).

¹ Sturgeon (2006); at p. 35.

² International Trade Centre UNCTAD/WTO (2004).

This paper sets out the general case for TPOs to reach beyond their traditional scope of trade promotion activities to meet the challenge of facilitating integrative trade³ in the Internet age. It draws on a survey of well-established integrated trade service leaders, with a particular focus on electronic trade finance. The observations from the survey are placed in a conceptual framework to facilitate analysis on the basis of which operational suggestions and recommendations for TPOs can be derived, and areas for further and more detailed research can be identified.

Background and Methodology

Trade facilitation functions and institutions

The various functions and services that enter into trade facilitation can usefully be sorted into two groups based on whether they are provided prior to a sale (front-end or upstream) or following the sale (fulfillment or downstream):

- a) Global Trade Development (GTD) activities support the front end of transaction development; these include:
 - Electronic marketplace facilities, including trade portals/samples, virtual trade shows and electronic catalogues.
 - Exporter and importer missions.
 - Country image building (e.g., advertising, promotional events, advocacy).
 - Firm-specific export support services (e.g., exporter training, technical assistance, capacity building).
 - Provision of market intelligence, market research and publications (including general sector and firm-level information⁴), qualifications search.
 - Legal and contractual services.
 - Customer Relationship Management (CRM) services.

³ The "integrative trade" terminology/model has been outlined by Export Development Canada (EDC) in various publications and in successive EDC Corporate Plans. See, for example, EDC, *Anticipating Needs, Delivering Results: EDC in an Evolving Trade Environment*, Submission to the 2008 Legislative Review of the Export Development Act, May 2008.

⁴ See for example Lederman et al. (2007).

- b) Global Trade Management (GTM) activities meanwhile support the fulfillment stage of transactions⁵; these include:
- Physical movement of goods (e.g., sourcing, procurement, tracking).
 - Managing information streams (e.g., purchase orders, shipping documents, including electronic trade documents, certification, regulatory compliance and customs processes).
 - Provision of financial supply chain services (including letters of credit, e-financing, payments services etc.).

A wide range of entities engage in these GTD/GTM activities, including:

- export credit agencies (private and public),
- private sector trade councils, trade services agencies and sectoral hubs,
- government agencies engaged in trade promotion – including through government E Marketplaces,
- financial institutions, including development banks, international trade banks, and commercial banks,
- international organizations involved with trade, such as the United Nations Conference on Trade and Development (UNCTAD) through its Global Trade Point Network, or GTPNet, and
- large suppliers and large buyers.

As well, logistics firms and information technology providers play important roles in facilitating trade.

Traditionally there was little overlap in activities of organizations carrying on GTD functions such as conventional trade promotion agencies and those involved in GTM functions such as logistics firms. However, links are being forged. Examples of early movers include the US Export Import Bank's collaboration with the logistics firm UPS, Mexico's Nafinsa's linkages to

⁵ Many of these activities are often described as part of Supply Chain Management (SCM). The SCM concept generally incorporates only the goods and information aspects of value chains. GTM recognizes the equal importance of the financial elements in the value chain, and reinforces the integration of the three, something that the SCM literature does not normally promote.

domestic supply chains, and the efforts of Korea Trade-Investment Promotion Agency (KOTRA) to move downstream from trade promotion to incorporate contract negotiation and dispute resolution services.

Factors reshaping the environment for trade facilitation

Three key factors have served to enable and motivate the establishment of linkages between the upstream (GTD) and downstream (GTM) aspects of trade facilitation. These are the growing significance of global value chains, the emergence of electronic platforms for service delivery, and the associated emergence of electronic finance.

The growing significance of Global Value Chains (GVCs):

As a Conference Board of Canada study recently noted:

“Rather than producing something entirely within one country, companies increasingly use inputs from two or more countries to produce a single good or provide a service. Declines in tariffs, transportation costs and communication costs, combined with technological advances, have made it both possible and attractive to break production into smaller parts. Companies then produce or buy each input, for example, goods such as electronic parts or services such as engineering, from wherever it can be made or provided most efficiently. In recent years, exports and their imported inputs have risen together, increasing the share of components in the total trade. There has also been a significant increase in global foreign direct investment and sales of foreign affiliates. Combined, these developments provide strong evidence of a trend toward increasingly global or regional—rather than strictly national—value chains.”⁶

⁶ Goldfarb and Beckman (2007).

This emergence of integrative trade has created new challenges and opportunities for firms engaging in international commerce and, by the same token, for institutions engaged in facilitating international commerce.

Participation in GVCs is especially important for SMEs. Such participation provides SME suppliers “access to global markets at lower costs than those faced by individual small-scale producers, due to the intermediation function assured by the contractor.”⁷ As well, “the exposure to learning processes among partners in global value chains generates knowledge spillovers and stimulates human and technological capital upgrading”⁸. SMEs that succeed in integrating into several supply chains gain access to economies of scale through increased specialization, as well as increased stability and improved financial performance. The catch however is that the ability to internationalize operations and to participate in GVCs may depend on a firm’s scale of operations, its capital resources and its human resources and leadership, assets which many SMEs lack.

As well, many SMEs that do participate in GVCs often are low value contributors (in terms of either monetary value of input, level of technological content, or level of intellectual property). As a result, they tend to have limited power in influencing the terms of their participation in supply chains (e.g., over pricing, delivery time, payment terms). Given the many challenges that SMEs face, any assistance that responds to identified needs in terms of facilitating their gaining a foothold or improving their position in GVCs, including acquiring the enabling information technology base⁹ warrants some further consideration.

As outlined in the force field illustration below, many drivers can be identified that prevent/hinder SME entry into GVCs

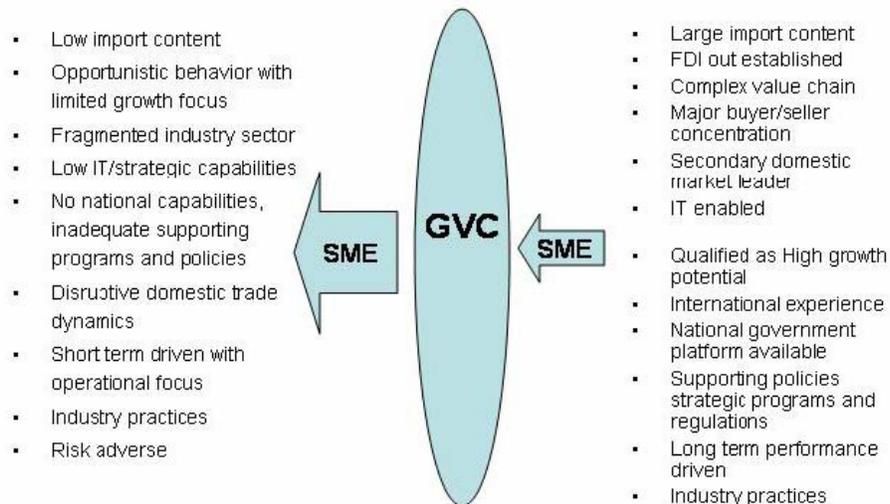
⁷ OECD (2007).

⁸ Ibid.

⁹ The importance of technology and particularly information and communications technology to improved internationalization and export performance has been documented by Karavdic and Gregory (2004) and Karavdic (2006); its importance to relationship management with trading partners has been shown by McCabe (2006).

(left hand column) or encourage SME entry into GVCs (right hand column). In the current environment, the drivers applicable to SMEs are heavily skewed to the left hand column.

SME/GVC Access Drivers



E-Trade Services Facilitation Platforms (e-platforms)

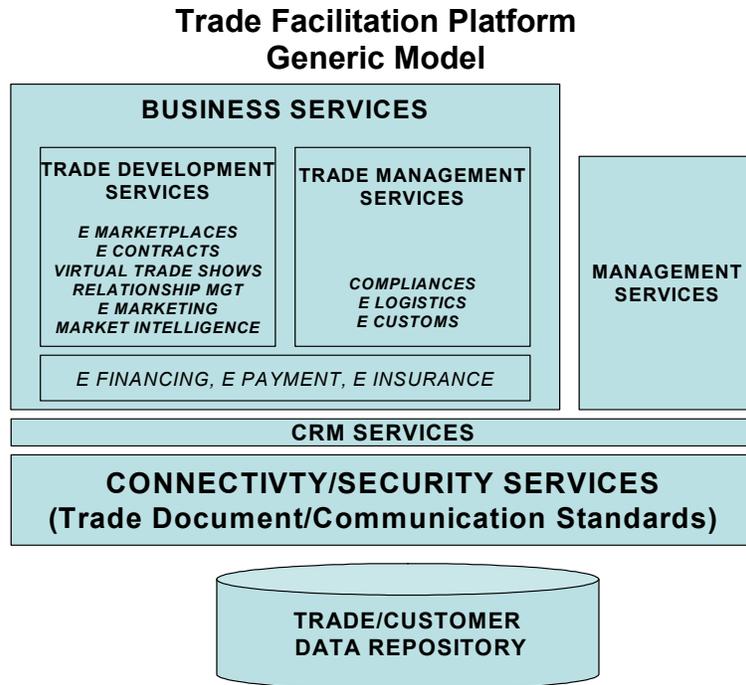
Numerous e-platforms have been developed in recent years which provide a mature portfolio of business tools and trade technology applications. Some examples are:

- Alibaba, E Bay
- Taitra (Chinese Taipei)
- UTrade Hub (Korea)
- Tradelink/DTTN (Hong Kong, China)
- TradeNet/Trade Exchange//Lawnet/Portnet/Marinenet (Singapore)
- Project A/B/C (Chinese Taipei)
- Nafinsa (Mexico)

These include private and public/private platforms. Moreover, each of these can be further categorized in many different ways: many to many, one to many, buyer oriented, supplier

oriented, trade compliance facilities, trade matchmaking etc. However the majority of the platforms are clearly targeted at GTM activities, rather than GTD activities.

The figure below represents generically the core functionalities that could appear on an Electronic Trade Facilitation Platform.



Electronic Trade Finance (ETF)

Sometimes referred to as supply chain finance or data triggered financing, ETF leverages a technology investment, an E platform, to make all participants privy to the same trade data (e.g., purchase orders, invoices and acceptance notifications between members of a supply chain). This allows the creation of payment triggers (data triggered financing) based on specific events and contracted terms, thereby diminishing traditional payment risk and accelerating cash flow, while also allowing a reduction in the cost of financing to SME suppliers within the chain based

on the higher credit rating of the purchasers— a specific example of such a practice is “reverse factoring”¹⁰.

ETF provides tangible benefits to both buyers and sellers within a supply network: For buyers, the major advantages of ETF include: reduced working capital requirements by extending days payable outstanding, reduced accounts payable administration costs due to fewer manual transactions, and even a reduced cost of goods—many buyers report being able to negotiate better discounts from suppliers (up to 10% in some cases). For suppliers, the major advantages of ETF include a lower cost of capital through the discounting of receivables at preferred rates based on the better credit risk profile of the buyers¹¹, but also increased certainty of cash flow based on defined payment terms and visibility of payment status, reduced accounts receivable due to the availability of early payment opportunities to the buyers, and acceleration of cash flow using pre-shipment, work-in-process financing based on data triggers.

Importantly, the more efficient intermediation of capital into the supply chain network fundamentally lowers the risk profile of the network—in areas ranging from payment risk to

¹⁰ Factoring refers to the practice whereby an intermediary, usually a finance company or a specialized factoring company, buys at a discounted value the debts owing to a business. The factoring intermediary typically advances funds covering a substantial portion of the debts owing to the business (with the percentage depending on the age of the receivable), while also providing accounting and debt-collection services. For the business, this accelerates cash flow. In “reverse factoring”, the intermediary buys only those accounts receivable that are from highly creditworthy buyers such as large multinationals (Kappler, 2004). In this case the credit risk incurred by the factoring company is based on the default risk of the buyer and not on that of the SME, effectively lowering the cost of credit to the SME. ETF financing practices are evolving: the emerging trend away from letters of credit towards open account as a means of settling international trade transactions is accelerating the adoption of such financing strategies by large buyers and global financial institutions. A far more comprehensive discussion of ETF can be found at source websites such as www.aberdeen.com and www.tradecard.com.

¹¹ Up to 280 basis points in some cases; see Sadlovska and Enslow (2006).

performance risk (e.g., on-time delivery). At the same time, by building trust amongst the participants, ETF enhances the stability of the network. The ETF model stands in contrast to the traditional, adversarial procurement model in which the more powerful buyer seeks to extract concessions on price, payment terms and delivery from the weaker supplier. In fact, this “cost shifting” to the weaker participants actually increases the cost to the buyer as the supplier incorporates its higher cost of capital into the cost of the goods. Moreover, in extracting such concessions, the buyer weakens the overall strength of the supplier thereby increasing the long-term risk of GVC disruptions.

Analytical Approach

To gain a better understanding of the emerging trends in the area of integrated electronic trade-related services, to assess the leveraging effect that the emerging linkages between upstream and downstream trade facilitation may have on trade development and promotion activities, and to evaluate the capacity to innovate in this area, a survey was conducted in 2006 of well-established trade service leaders, with a particular focus on electronic trade finance.

The institutions that participated in the survey represent a wide range of institutional types¹². That being said, not all institutional types are equally well represented—in particular private sector institutions are less well represented than hoped for, which represents a limiting factor for the results. Moreover, certain institutional types are represented in some economies but not in others. This reflects either inability to identify an institution of a given type for the economy in question, or if identified, a failure to elicit agreement from the institution to participate.

The level of representation for the survey meetings ranged from middle management to the most senior executive level. Participants represented themselves as having both the authority

¹² Attached, as Appendix A, is a list of all the institutions that agreed to be interviewed for the study.

to speak on the subject matter in question, as well as the experience base to support their views.

The heterogeneity of the surveyed institutions made a standardized questionnaire inappropriate. Accordingly, based on research drawn from publicly available sources on each institution, interviews were tailored to the specific interests of the institution in question. One obvious drawback of this approach is that it limited the ability to compare results across institutions.

As the experience of the survey team increased during the project, cross references to other institutions' activities were used during the interviews to facilitate discussion about different approaches, and to determine the distinguishing features in approaches between economies, private sector companies and government agencies. While this enriched the discussions, it did have the drawback of further limiting the direct comparability of the information gained from the various participating institutions.

Against this background, questions were asked in five general areas:

- Who leads or influences the development and implementation of electronic trade finance practices? What are your key service trade offerings (upstream and downstream); what has been the adoption rate and what have been your key market successes?
- How are the emerging or implemented electronic trade finance practices influencing integrative trade? Identify examples of trade finance value chain integration (working capital, bonding, insurances, data triggered financing).
- How are these electronic trade finance practices linked to domestic supply chains or critical sectoral supply chains in these economies? Have you targeted specific industry sectors, or size of companies?
- What is the role of the different public and private sector players in electronic trade facilitation?
- Has leadership in trade practices translated into leadership in E Trade services and electronic trade finance? If yes, in what way?"

Additionally the responses received were evaluated within a conceptual perspective which argues that organizations that become lead users of information technology benefit from heightened performance and distinguish themselves from their competitors. Applegate (1999) represents this heightened innovation process by creating a stage model of ICT development. As companies progress through each stage the option value (or the potential for increased innovative impact) of their ICT infrastructure grows. The three stages are:

- Stage 1: Technology investments in reusable infrastructure can lower costs (e.g., by exploiting scale economies, standardizing data etc.) and create strategic “option values” for future growth. Project C from Chinese Taipei, to be discussed later in the paper, is an example of a reusable technology investment.
- Stage 2: Technology investments in new processes or improved processes can drive profitable growth through further cost reductions and more importantly through revenue generation. The very extensive effort by Singapore in standardizing documentation, and reducing the documentary requirements for trade flowing through its economy would be an example of this in a government context.
- Stage 3: Technology investments that create competitive advantage can build barriers to entry by others, helping to sustain profitability. The Nafinsa example, to be discussed later in this paper is an example of this.

Finally, as regards the information collected, one obvious caveat concerns the fact that the collection of the information (with one exception) was not covered by Non Disclosure Agreements (NDAs). It should be borne in mind that the absence of NDAs undoubtedly constrained the amount of information that was provided by participants, particularly those in the private sector. In the case of the one entity to which an NDA applied, the information provided in this document has been agreed to by the party in question.

Summary of Main Observations

Within the context of the general factors discussed previously, outlined below are some general observations gleaned from the research. In most cases, specific institutions are identified as the source of the observation, as they are implementing it in practice or the individuals interviewed provided an opinion to support the observation.

(a) Private and Public Electronic Trade Services Initiatives

Adoption of e-platforms

The role of neutral intermediaries in providing e-platforms seems to be established (e.g., KTNET, Trade Gate, DTTN, standards associations). However, the definition and dynamics of neutrality are probably driven by the power balance of the parties involved. As such the identification of issues to be dealt with in neutral situations is probably a function of the issues becoming standardized among competitors or no longer providing a competitive advantage to the parties to the platform.

Private sector banks for their part are slow adopters of multiparty e-platforms because they see such platforms as a challenge to their relationships with their clients or having a negative impact on their brand. Also by keeping transactions in a non commoditized form, they can continue to promote their solutions as “unique”.

The underlying logic of an e-platform that incorporates GTD and GTM functionalities is that these functionalities (contract, dispute resolution, shipping, compliance, financial tools) can be commoditized and automated, driving down trade costs for participants. However, notwithstanding the widespread use of technology for the purposes of integration and innovation at the GTM end of the trade facilitation spectrum, only a few entities (e.g., Kotra and Nafinsa) are trying to bridge these functions with downstream GTD functions. Nor is there strong evidence of general momentum in that direction.

Indeed, there is a perception that e-platforms are primarily a Stage 1 type of process innovation/efficiency exercise for GTM activities, with far less application in the upstream GTD environment. Consistent with this, most examples of innovation observed were at the Stage 1 level (value enabling). Few examples of Stage 2 (value creating) and Stage 3 (value sustaining) have been seen, except in narrow niches (e.g., Hong Kong (China), Korea, Mexico, Singapore, Chinese Taipei). This may reflect the fact that innovation, in many cases, reflects best practices of a sector being copied, encouraged by benchmarking. In this regard, it has been noted that "...if all firms in an industry are seeking opportunities in the same places, they tend to come up with the same innovations." (Sawhney, 2006).

However certain projects (Project C, Nafinsa) where innovation moved outside "established boundaries" demonstrate the potential for Stage 2 and 3 innovation, if the currently divergent aspects of GTD and GTM could be integrated.

Integrating SMEs into GVCs

Some e-platforms (e.g. DTTN, Tradelink, U TradeHub, Kotra) have been successful and embraced by some SME exporters. However, most countries and agencies visited are struggling with their SME constituencies (e.g., the Comet project in New Zealand (Ministry of Economic Development, 2006) and the overall effectiveness of public and private e-platforms as a means to incubate and support the development of new trade (import-export) relationships remains open for discussion. This is largely because the number of participants has been low. The slow pace of adoption is in turn extending the time line for investment to improve the functioning of e-platforms.

There is a clear impression that SMEs are neither the beneficiary of ICT innovations (Stage 2 and 3), nor demand such. The situation can be described as a glass ceiling and floor at the same time. Institutions are able to see through, but neither side appears to have an imperative to push through. There are some claims that medium-sized companies are now being targeted

more by e-platforms as the next market segment to move into from a growth perspective (e.g., TradeCard).

That being said, it is important to note a segmentation based on market characteristics. For those SMEs that are in a “many suppliers to one buyer” market, there is a greater likelihood of being required by buyers to adopt ICT practices that will pull them into GVCs thus facilitating their internationalization. However, for those SMEs that are in “many suppliers to many buyers” type markets, the drivers for a higher degree of ICT adoption are not as high, and their path to internationalization may be slowed down. For this latter group it would appear that there is a role for TPOs to facilitate the adoption of ICT practices and for e-platforms to accelerate the internationalization process.

Advanced payments, reverse factoring and credit rating information services are increasingly being used within e-platforms to support SMEs (e.g., Nafinsa, Coface, TradeCard, Project C). However, few stakeholders are principally focused on addressing the major ETF gaps with SMEs.

Moreover, TPOs often appear to be inclined to disengage from the ICT enablement of SMEs once they reach a certain level of sophistication in developing international trade opportunities. This poses a problem for their SME clients since most of the opportunities for ICT enablement are in the downstream GTM aspects of participation in GVCs and, in most cases, there is no neutral third party with a mandate to continue to facilitate ICT enablement. The exception to this observation is where national government trade facilitation platforms of integrated trade services are available.

Other areas identified where improvement in TPO services for SMEs by means of e-platforms could be made include reducing non-tariff barriers, providing easier access for SMEs to global markets, and improved matching of buyers and suppliers. In these cases, however, the acceptable time horizon for investment purposes is longer.

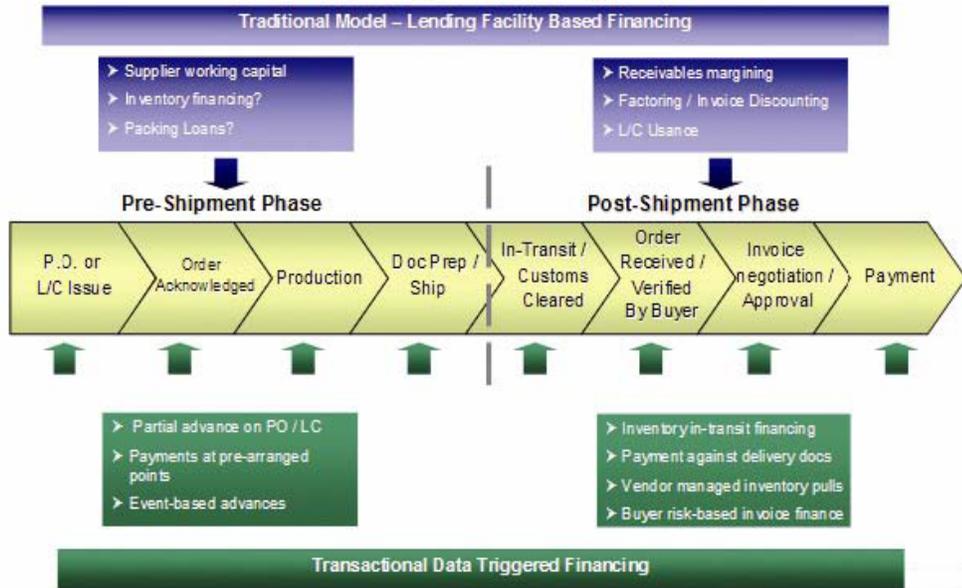
(b) E Trade Finance (ETF)

ETF and ETF supporting systems such as secure payments systems (e.g., Alibaba (Alipal) and eBay (Paypal)) are important in helping to facilitate transactions among unknown trading partners. This observation reinforces the importance of embedding ETF facilities into e-platforms to create initial trust between newly trading parties. However few collaborative public and private initiatives have tried to integrate ETF into GVC structures, and with varying degrees of success (i.e., Kotra, Nafinsa).

In the banking community, the private sector global banks have been the most active in supporting ETF (e.g. Standard Chartered, HSBC). They are actively using ICT investments to provide financing earlier than before within major global supply chains, but consider it a proprietary advantage as it provides a differentiating feature in the competitive world of global banking. National banks (including the Canadian commercial banks) tend to very conservative and have lagged behind. Several logistic firms have implemented such functionality on a smaller scale but primarily in North America (e.g., Fed Ex). Non-banks may provide new capabilities (e.g., UPS, Wal-Mart) for established clientele and supply chain partners and may disintermediate established players. The ability to access a detailed perspective on these private sector facilities was, however, limited because firms were not in a position to disclose information other than what is available on their public web sites due to competitive reasons.

All recognized that data triggered platforms were a reality of future trade practices, however there was open debate as to the pace of adoption of such functionality beyond the sophisticated SCM practices of major buyers and their tier 1 suppliers. The figure below shows the migration from traditional paper based forms of trade finance to data triggered forms of trade finance and the expansion of products conceptually available, given the presence/utilization of e-platforms.

The Supply Chain Finance (“SCF”) Model



Outside the purely private sector, the potential of the concept is also recognized by many, but demand for it has not been forthcoming except in specific situations usually driven by country-specific needs or as an extended product offering of already established products. Kotra appears to be experimenting with on line financial services but this is still in a prototype environment. Consequently, outside of Project C (Chinese Taipei) and Nafinsa (Mexico), we did not uncover any on line public/private e-platforms that have fully operational data triggered ETF. Both of these cases are described in the Box below.

Project C – Chinese Taipei

Project C (MOEA, 2004) built on the successful implementation in 2000/2001 of the first two stages (Projects A and B) of the so-called “Vitamin Plan” which had the objective of promoting e-commerce in the information technology (IT) industry¹³.

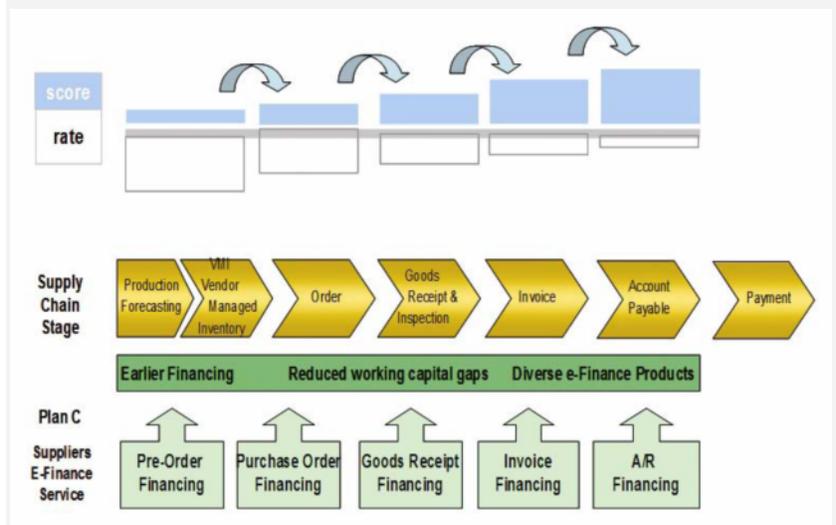
- Project A involved helping leading global information technology firms (IBM, Compaq and HP) and Chinese Taipei’s leading IT manufacturers to establish an e-business supply chain covering every stage from design through procurement.
- Project B involved helping Chinese Taipei’s leading IT manufacturers and more than 1,800 of their component suppliers to establish similar e-business supply chains covering the stages from procurement to manufacturing.
- Project C was an extension of this success into the provision of Internet-based electronic banking services with a focus on the liquidity needs of sub-suppliers associated with the main manufacturer that anchored the global supply chain within Chinese Taipei.

The principal issues to be addressed in Project C were that the majority of payments were still paper-based in the form of written cheques (raising a working capital timing issue), that most banks still relied on letters of credit and letters of hypothecation which require time commitment as most processing of these instruments was done manually (also raising a working capital timing issue), and more often than not the financing required collateral (raising a working capital availability issue). Project C addressed the working capital timing issue by allow-

¹³ The “Vitamin Plan” included two further stages: Project D focused on the adoption of e-business delivery services by Chinese Taipei’s IT hardware and semiconductor manufacturers and logistic service providers; Project E focused on interactive models of e-Business for collaborative design involving customers, suppliers and technology design partners at the new product development stage. The migration of much of the hardware manufacturing to mainland China in recent years has stalled further action in these areas in addition to reducing the quantitative impact of the A-B-C stages.

ing suppliers to access working capital earlier in the production process and by removing manual processes related to payments; it addressed the working capital availability issue by giving them access to unsecured funds, thereby increasing liquidity.

The participating banks were given access to the supply chain information (date of order, goods receipt, invoice issuance, account payable postings, etc). The banks would then issue funds to the sub-suppliers in question, in a phased approach with a declining price structure as the transaction moved from origination to fulfillment. The flow of events in this process is illustrated below (MOEA, 2004).



At the time of the visit to Chinese Taipei in March 2006, the program was considered successful in that:

- By early 2004, nearly 24 billion TND had been disbursed under Project C and more than 21,000 suppliers were beneficiaries. The funds disbursed were actually incremental so the program had not just displaced established facilities;
- The cost of funding had declined by up to 2%; and
- The default rate was lower than traditional lending.

However, some structural issues that were beginning to limit the upside potential of the program were also identified. These limitations fell into several categories:

- The major manufacturers and buyers in the supply chains appeared to be setting their IT priorities elsewhere than on the payments processing function. Paper checks still remain the norm.
- The program was launched in an economy that has significant financial liquidity, such that this particular facility was in competition with other sources of funds. It would appear that although the program has provided value, the “uniqueness” of the program may have been overestimated.
- Financial institutions were re-evaluating their commitment to the program in light of their strategic interests. This had led in some cases to the institution providing continued support but perhaps not “championing” the program. In at least one case, the financial institution involved withdrew from the program because the facility simply did not meet the strategic interests (product profile, branding) that the firm wished to promote.

Project C was, and probably still is, a clear example of where integration of the goods, information and financial aspects of GTM did lead to innovative practices. Two Stage 2 examples of these practices are identified below:

1. The real innovation of Project C was not the improvement associated with automation of the existing processes, but rather the use of third parties’ SCM systems originated by projects A and B to provide banks transparent, timely and accurate information. The provision by the lead manufacturers, the core clients of the disbursing financial institution, of the underlying information gave sufficient comfort to the banks that the suppliers would meet their repayment obligations that they were willing to extend credit without requiring guarantees, collateral or security as previously had been the case.
2. New developments included the extension of new credit, the provision of funds earlier (e.g., pre-purchase orders) than is the normal practice of financial institutions in this sector, and the apparent changes in the security/collateral requirements of the participating financial institutions.

Nafinsa Productivas – Mexico

In 2000, the Mexican government, having identified a serious liquidity issue facing Mexico's SMEs, directed Nafinsa¹⁴, a government-owned development bank, to establish an IT-based facility to facilitate access to 'structural' liquidity for SMEs to enhance their growth and support the internationalization of their operations.

In 2007, there were about 115,000 registered SME suppliers on the platform, of which about 85,000 were active participants. The platform is anchored by more than 600 buyers, ranging from government agencies providing services to Mexican citizens (which is a vote of confidence by the Mexican government in Nafinsa's operational performance), to major government agencies running power and energy utilities, to major private sector buyers (retail stores, bakeries, hotel chains). The volume of transactions on the platform has grown to about US\$ 12 billion annually.

For the majority of the participants, the primary motivation for being on the system is the financial stability of the principal members of their respective supply chains. By being on this platform and reducing the risk of poor financial performance of their suppliers, they mitigate risk.

For buyers, presence on the platform allows them to obtain extended payment terms from their suppliers (i.e., from 15/30 to 90 days), which has an immediate, positive benefit on their working capital requirements and cash management practices.

For suppliers, participation is a reputation enhancer since it is the buyers who invite them onto the platform. From a cash management perspective, suppliers have now moved from short payment terms (net 15 to 30 days) to next day payment terms once the accounts payable has been recognized by the buyer and posted to the electronic platform. Once posted, suppliers are able

¹⁴ In mid-2007, operational responsibility for the e Platform migrated from Nafinsa to Mexico's TPO (Bancomext). This move was in part due to the recognition of the platform's value as a trade development tool for Mexico's exporters.

to sell their accounts receivable immediately if they choose to at discounted rates based on the buyer's credit rating, giving them access to cash much sooner than before.

As the purchasers of the accounts receivable are financial institutions that are participants on the platform¹⁵, they can establish a documented track record of performance with other financial institutions. This has led to extensions of credit (outside the platform) for other activities (capital equipment purchases, mergers/acquisitions) to the suppliers that would not have been available without this platform.

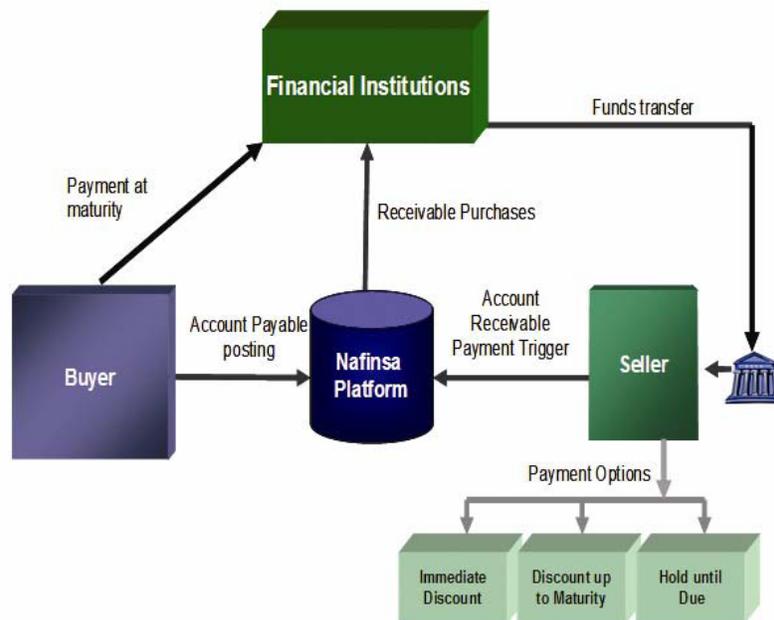
The financial institutions for their part are now purchasing assets that were not available before and are using the underutilized credit capacity of the buyers as the credit enhancer. This has allowed them to extend further credit to buyers, and has helped them enhance their relationships with these buyers as the buyers continue to grow, both domestically and internationally. The platform has particularly benefited factoring companies in Mexico, as factoring volumes have risen significantly.

The actual mechanics of a transaction are as follows:

1. A Cadenas Productivas program is set up with a large buyer.
2. Nafinsa hosts the platform for data exchange.
3. Suppliers are invited by the buyer to register to transact on the platform. Standard terms are negotiated (generally net 90 days) (off line).
4. The buyer issues a purchase order to the supplier (off line).
5. The supplier performs the work and submits an invoice to the buyer (off line).
6. Goods are received. When the invoice is accepted by the buyer, the supplier is notified by a posting of the buyer's Account Payable (supplier's Account Receivable) on the platform.
7. At this point the supplier has three options: (i) immediately discount the Account Receivable at rates, posted on the platform, based on the buyer's credit risk; (ii) discount any time

¹⁵ It should also be noted that the participating financial institutions include traditional banks (deposit taking institutions), as well as other financial institutions such as factoring companies.

- until maturity of the receivable; or (iii) wait until maturity for payment (i.e., net 90 days from posting on the platform).
8. Upon discount, the buyer's credit limit with the financial institution is reduced.
 9. Dependent on the action chosen in Step 7 funds are remitted to the supplier net of fees and discounts, next day through the Financial Institution.
 10. The buyer makes payment to the Financial Institution based on the payment terms negotiated in Step 3.
The platform is illustrated in the figure below.



This platform provides examples of a number of innovative practices that can be categorized as Stage 2 or value creating.

- For participating financial institutions, it mitigated risk exposure to the buyer's supply chain partners.
- For participating SMEs, it provided access to increased liquidity.
- For both buyers and suppliers, the platform improved terms of payment.

- The establishment of “reverse factoring” on the platform, supported with an appropriate e-commerce legal framework, has revitalized a traditional paper-based financial practice.
- By placing multiple banks on the same platform, bidding for the same asset, the platform has created choice of financial partners to the SMEs (something which is quite rare as the traditional banking relationship involves one bank providing all the financial services to an SME client).
- For both buyers and suppliers, the platform has served as a means for cross-border trade promotion and cross border fulfillment.

Arguably, this platform might also be considered to embody a Stage 3, value sustaining, innovation since firms have to be "invited" onto the platform, a process which constitutes somewhat of a barrier to those not already on the inside, and by the same token, sustains value for those that are already in. At the same time, it must be noted that from the government’s perspective this platform was intended to break down barriers to participation by SMEs, and it has achieved precisely that objective¹⁶.

One measure of the success of Nafinsa’s platform is that it has since been launched in selected Central American economies by the Central American Bank for Economic Integration (Cabei). Currently a number of major buyers on the Mexican platform are using the platform as a means to extend their payable obligations to suppliers in these newly adopting economies. It would appear that the Nafinsa platform has the potential to become a standard within this region.

One appeal of the Nafinsa model is that it is not dependent on GVCs. It can be based initially on domestic supply chains and then extended outward to support regional supply chains, facilitating its application in developing economies.

¹⁶ More generally, technological innovation can break down barriers (or allows them to be broken down) and changes business models (e.g., GHX e-marketplace), even if at an individual enterprise level, which is the perspective for which Applegate's “stage” approach to innovation was developed, the intent is to sustain the ability to capture value.

Discussion

Unquestionably, trade facilitation is being transformed by a progressive shift of functionalities into e-business platforms. This is observed in most TPO's where customer relationship management (CRM) functionalities have been, or are being, implemented. However, TPO's have tapped only a limited amount of the full potential for integration of upstream GTD functions with those of the downstream GTM functions—despite some very ambitious and well-thought out projects such as the “Vitamin Plan” launched by Chinese Taipei. The current state of affairs therefore is one where most TPO's are generally under-leveraging the potential of e platforms rather than using these platforms in an integrated fashion to deliver such capabilities as virtual trade shows, online catalogues, e contracts or direct links to e marketplaces. Further integration of the functions along the GTD/GTM spectrum, combined with continued investment in data mining and integration of CRM functions, appears to offer the promise of further product, service, and trade process innovation. In particular, wrapping GTD services around transactional services (ETF, GTM) could be a major catalyst for the development of trust among unrelated parties thereby delivering a significant trade enabler (due to reduced perceptions of risk), and additionally serve as a constructive force in linking, or creating operational overlaps between, trade development services and non traditional functions such as e customs/compliance and e logistics services.

A role for public policy

There appear to be two principle reasons for the limited extent of integration seen to date. First, there is the problem of achieving sufficient scale to make the platform sustainable/profitable, especially given the high attrition rate of participants (reflecting the natural mortality rate of businesses, mergers and acquisitions, and strategic withdrawal from markets). Second, there are various externalities inherent in such networks; accordingly, since the sponsor or organizer of the network is unlikely to cap-

ture the full value generated by the network, it is likely that there will be under-investment by the private sector

These considerations suggest that public-sector involvement might be required, especially if the principal beneficiaries are to be SMEs (as in the Nafinsa model). The case for public sector involvement is strengthened to the extent that the creation of a neutral platform facilitates participation by SMEs, that participation in such platforms increases the number of SMEs engaging in foreign markets, and that such engagement raises their overall performance level.

Public participation (e.g., for procurement purposes) would also help stabilize the platforms over the longer run given the risk that private sector leaders may shift their operations internationally for competitive reasons (e.g., as has been seen in the case of Chinese Taipei's IT industry).

Lessons from best practices internationally

From a public policy perspective, these platforms should be seen as basic economic infrastructure—enablers and facilitators of future performance, rather than as a tool for immediate returns in the form of, say, near-term increased exports or number of exporters. Such platforms constitute, therefore, long-run strategic investments first and foremost, although the near term and material paybacks in process cost savings and increased trade volumes were clearly benefits identified by the economies that were early movers in adoption of these e platforms.

Given the long-run nature of such projects, the wide range of functions that could be integrated, and the large number of participants from both the public and private sectors, a well laid-out strategic plan is called for (e.g., such as Chinese Taipei's "Vitamin plan"). The Nafinsa example shows that such projects can be developed on a national platform, and then once successful, used as a tool for internationalization, as Mexico is now doing.

Such integration efforts can be based on an existing e-platform within government that is considered leading edge for its functionality (e.g., finance, security of trade, trade facilita-

tion, B to B, G to B). Other public sector entities that have relevant knowledge or capabilities (e.g., public sector business development banks or credit risk taking agencies) can be engaged to take advantage of tacit or codified knowledge that they might have (e.g., screening of foreign counterparties in e market-places).

Fundamentally the models that were highlighted in this research effort were all examples of public private platform (PPP) partnerships. The public sector may have provided the “neutrality/trust” factor to the platform, but the content of the platform in many cases was a function of established product/services in the private sector, or which required private sector competencies to develop and incorporate. Illustrative examples of these products/ services that could be included in such platforms are:

- a national letter of credit depository,
- standardized E Payment and E Invoicing facilities,
- credit rating services at the economy level for foreign buyers and domestic sellers as a key trust building block with the objective of breaking the electronic anonymity barrier,
- a database of qualified trade agents,
- dispute resolution processes,
- contract negotiation tools,
- bonding mechanisms, and
- early supplier payment programs.

The PPP efforts observed were clearly examples of accommodation between the patient capital of government and the entrepreneurial interests in the respective economies in question.

Finally, if the principal beneficiaries are to be SMEs, economies need to address the issues of meeting the service level expectations of SMEs in the “low touch” environment of e-platforms while maintaining the e-platforms cost performance. The majority of SMEs may not be ready for this environment (they are lifestyle firms rather than growth firms). Accordingly,

it is important to target for participation the minority of SMEs that are growth oriented, not those that are lifestyle oriented¹⁷.

Conclusion

The world of trade development and support activities has come a long way since 2001, when the International Trade Centre undertook a study on SME views on information and communications technology (ICT) as a business development tool with the following general conclusion:

“...connectivity is seen as a valuable communication tool, but not as an essential aspect of competitiveness. The use of ICT was acknowledged as important to establishing a modern and innovative business culture within the enterprise, but was regarded as having no, or minimal, direct impact on sales prospects or purchasing efficiencies.

Few of the managers considered web strategy an integral part of their overall business. Nor did they believe the application of ICT would become a fundamental element of their long-term business development strategy. For the vast majority, the seamless e transaction is a long way off because of perceived difficulties in introducing on line financing and payment and customs and taxation applications.”(ICT 2000, p.23)

This study provides evidence that all the perceived challenges, as articulated in the statement above, have been met. It is no longer a question of immature or unproven technology, as there are examples of implementation. This study also highlights opportunities for further innovation by TPOs through integration of their upstream GTD operations with downstream GTM functions, and the potential to facilitate SMEs interna-

¹⁷ The concept of a lifestyle exporter is meant to indicate that the enterprise in question has reached a level of successful performance with which the owner operator is quite satisfied and responds to export opportunities opportunistically, not in a strategic growth-oriented manner.

tionalization efforts through ICT enablement, although recognizing that this may require some form of government involvement.

The main conclusions/advantages regarding the incorporation of ETF in e-platforms are as follows:

- Earlier financing for suppliers
- Improved cost of funds for the suppliers
- Improved cash management opportunities for both buyer and supplier
- Lower bad debt ratio
- New growth opportunities for financial institutions
- Capacity to extend outside a specific economy's boundaries

However, at the same time, several obstacles have been noted:

- These platforms can challenge brand image and the strategic objectives of firms which may lower their enthusiasm for them.
- They fundamentally hinge on the buyer's willingness to use its underutilized credit capacity, or the buyer's ongoing commitment to the priority of limited capital invested in such a venture.

While most TPOs appear to be at the earlier stages of this integration/innovation effort, not to continue to pursue the opportunity actually creates an opportunity cost that will only diminish the value of TPOs to their prime constituents, the SMEs, as global trade evolves.

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APPENDIX A: Institutions Visited

AUSTRALIA

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|---------------------------------------|---|
| Trade Promotion Organizations | Austrade www.austrade.gov.au |
| Export Credit Agencies | Export Finance and Insurance Corporation (www.efic.gov.au) |
| Banks | Westpac (www.westpac.com.au) ANZ (www.anz.com) Bibby Financial Services (www.bibby.com.au) |
| E Marketplaces/ Software Companies | Red Wahoo (www.redwahoo.com) |
| Academics | |
| Logistics | TradeGate (www.tradegate.org.au) |
| Other | Australian Government Information Management Office (www.agimo.gov.au) Australian Customs Service (www.customs.gov.au) Standards Australia (www.standards.org.au) |

CHINA

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| Trade Promotion Organizations | China Council for the Promotion of International Trade (www.ccpit.org) |
| Export Credit Agencies | |
| Banks | BNP Paribas (www.enercomxp.bnpparibas.com) |
| E Marketplaces/ Software Companies | |
| Academics | |
| Logistics | |
| Other | China International Electronic Commerce Center (www.ec.com.cn) APEC E – Commerce Business Alliance (www.apecceba.org) |

HONG KONG

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| Trade Promotion Organizations | Hong Kong Trade Development Council (www.tdctrade.com) |
| Export Credit Agencies | Hong Kong Export Credit Insurance Corporation (www.hkecic.com) Coface HK (www.coface.hk) |
| Banks | Standard & Chartered (www.standardchartered.com) Exonomy (www.exonomy.com) HSBC (www.hsbc.com.hk) |
| E Market Places/ Software Companies | Alibaba (www.alibaba.com) Core Solutions (www.coresolutions.com) |
| Academics | |
| Logistics | UPS (www.upscapital.com) |
| Other | Office of the Government Chief Information Officer (www.ogcio.gov.hk) Tradelink (www.tradelink.com.hk) Digital Trade and Transportation Network Ltd. (www.hk-dttn.com) GS1 HK (www.gs1hk.org) |

JAPAN

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| Trade Promotion Organizations | |
| Export Credit Agencies | |
| Banks | Mizuho Bank (www.mizuho.co.jp) |
| E Market Places/ Software Companies | |
| Academics | |
| Logistics | Polisa (www.polisa.or.jp) |
| Other | E Comm (www.ecom.jp) JastPro (www.jastpro.org) Rosetta Net (www.rosettanet.gr.jp) |

KOREA

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| Trade Promotion Organizations | KOTRA (www.kotra.or.kr) |
| Export Credit Agencies | Korea Export Insurance Corporation (www.keic.or.kr) The Export-Import Bank of Korea (www.koreaexim.go.kr) |
| Banks | |
| E Market Places/ Software Companies | EC 21 (www.ec21.com) |
| Academics | |
| Logistics | |
| Other | KTNET (www.ktnet.com); KITA (www.kita.org) LG Nortel (www.lg-nortel.com) |

NEW ZEALAND

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| Trade Promotion Organizations | New Zealand Trade and Enterprise (www.nzte.govt.nz) |
| Export Credit Agencies | The Treasury (www.treasury.govt.nz) |
| Banks | |
| E Market Places/ Software Companies | |
| Academics | |
| Logistics | |
| Other | State Services Commission (www.e.govt.nz) Ministry of Economic Development (www.med.govt.nz) Export New Zealand (www.exportnewzealand.org.nz) |

SINGAPORE

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| Trade Promotion Organizations | |
| Export Credit Agencies | Coface Singapore (www.cofacerating.com.sg) |
| Banks | Overseas Chinese Banking Corporation (www.ocbc.com) Development Bank Singapore (www.dbs.com) |
| E Market Places/ Software Companies | Crimson Logic (www.crimsonlogic.com) |
| Academics | |
| Logistics | APL Logistics (www.apllogistics.com) |
| Other | Singapore Customs (www.customs.gov.sg) Infocom Development Authority (www.ida.gov.sg) Standards, Productivity and Innovation Board (www.spring.org.sg) |

CHINESE TAIPEI

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| Trade Promotion Organizations | Bureau of Foreign Trade (www.trade.gov.tw) |
| Export Credit Agencies | Export Import Bank (www.eximbank.com.tw) |
| Banks | Huan Nan Commercial Bank (www.hncb.com.tw) Changhwa Commercial Bank (www.chb.com.tw) China Trust Commercial Bank (www.chinatrust.com.tw) |
| E Market Places/ Software Companies | Trade Card Asia Pacific (www.tradecard.com) |
| Academics | National Sun Yat-Sen University (www.oia.nsysu.edu.tw) |
| Logistics | |
| Other | |

